REMARKS/ARGUMENTS

Claims 16 and 35 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite in that the limitation "at least some of said means" in Claim 16 lacks sufficient antecedent basis. In response, Claim 16 has been amended to depend from Claim 4 rather than from Claim 3. The Applicant respectfully submits that Claim 35 correctly depends from Claim 23 and does not lack sufficient antecedent basis.

Claims 1-6,11-16, 20-25, and 30-35 stand rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent No. 5,638,523 to Mullet et al. ("Mullet") in view of United States Patent Application Publication No. 2003/0052896 by Higgins et al. ("Higgins") and "The Digital Magazine of InfoVis.net: Focus + Content" by Juan C. Dursteler ("Dursteler") and United States Patent Application Publication No. 2002/0044154 by Baar et al. ("Baar"). In addition, Claims 7-10 and 26-29 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Mullet in view of Higgins, Dursteler, Baar, and "A Framework for Elastic Presentation Space" by Carpendale ("Carpendale"). Furthermore, Claims 17-19 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Mullet in view of Higgins, Dursteler, Baar, and United States Patent No. 6,985,865 to Packingham et al. ("Packingham").

The Applicant notes that Higgins, Baar, and Carpendale are new references not cited by the Examiner in previous Office Actions.

Claims 1, 7-12, 16, 20, and 26-31 have been amended with a view to better defining the invention. No new matter has been entered by these amendments. Consequently, the Examiner is respectfully requested to consider the amended, previously presented, and original claims in view of the following comments.

Claim 1

For reference, amended Claim 1 recites the following:

> 1. (Currently Amended) A method for editing a multi-layer original image displayed on a display screen, comprising:
>
> in response to receiving an indication to edit a region of said original image, distorting a portion of a first layer of said original image to produce a distorted image for said region, said distorted image including a magnified region having a magnification for said region at least partially surrounded by an at least partially compressed region where said magnification decreases to that of said original image to provide context for said magnified region with respect to said original image;
>
> overlaying said distorted image on said region in a second undistorted layer of said original image to produce an overlaid image and displaying said overlaid image on said display screen to replace display of said original image, said distorted image at least partially surrounded by non-overlaid portions of said second undistorted layer in said overlaid image; and,
>
> upon completion of editing of said overlaid image, selectively propagating edits made to said first layer through to said second undistorted layer of said original image.

On pages 3-4 of the Office Action the Examiner cites Mullet, Higgins, Dursteler, and Baar against previous Claim 1 stating (underlining added by the Applicant):

> "Regarding independent claim 1, Mullet did not expressly disclose in response to receiving an indication to edit a region of said original image, however Mullet discloses information within the viewing area 15 is enhanced depending upon which mode the browsing tool 10 is in (column 4, lines 46-50), which reads on the claimed distorting a portion of a first layer of said original image to produce a distorted image for said region. Higgins discloses maps that can be manipulated, edited, annotated, panned, and rotated (paragraph 27). It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Mullet's system to produce a synchronized map for modification. One would be motivate to

do so because this allows users to update maps and make notes on maps to assist users in keeping track of desired information. Mullet did not expressly disclose distorted image including a magnified region having a magnification for said region at least partially surrounded by an at least partially compressed region where said magnification decreases to that of said original image to provide context for said magnified region with respect to said original image. Dursteler discloses a focal region with an elevation (pg 2, see Figure towards top) and a base region (pg 2, Figure towards top) and a shoulder region between the base region and the focal region (pg 2, see Figure towards top) and where the shoulder region is a compressed region with decrease elevation (pg 1, and see second and forth figures). Baar discloses projecting transformed layouts via a perspective projection results in a new 2D layout which includes the zoomed and compressed regions (paragraph 23). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Mullet's system by incorporating a 3-D look of a magnified area with a compressed magnified area between the magnified area and the original image. One would be motivated to do so because this would allow users to see a continuous image of the magnified area of the original image to the original image without losing the context of the original image as a whole. Mullet discloses the viewing lens 15 being overlaid on the original image 10 (Figures 2A-2D), which reads on the claimed overlaying said distorted image on a second layer of said original image to produce an overlaid image and displaying said overlaid image on said display screen to replace display of said original image. Mullet did not expressly disclose upon completion of editing of said overlaid image, selectively propagating edits made to said first layer through said second layer of said original image. Higgins discloses whenever a change occurs on one map, the system causes the same change to occur on the other map (paragraph 110). It would have been obvious to modify Mullet's system to modify one map and propagate changes to other maps. One would be motivated to do so because users would not have to make the same changes to multiple maps."

For reference, the selection from Mullet, cited by the Examiner above, recites the following (context and underlining added by the Applicant):

"FIG. 2a illustrates the browsing tool **10** of the present invention. The browsing tool **10** has a viewing lens **15** which is used for viewing information presented on the display screen. The viewing lens **15** is adjustable such that an operator can create a larger browsing tool **10**. Within the viewing lens **15** is a crosshair **11**. Crosshair **11** is used for 'targeting' objects within the viewing lens **15**. Also within the viewing lens **15** is a 'magnifying' reticle **13**. The magnifying reticle **13** is used to mark an area within viewing lens **15** which will be enhanced by the browsing tool **10** when the browsing tool **10** is in the magnification mode... The browsing tool **10** is rendered on the graphic display screen **27** such that it appears over the database information to be browsed through. An operator selectively positions the browsing tool **10** on the display screen **27** by moving the cursor **21** using the cursor control device **25**. While the operator moves the browsing tool **10** across the display screen **27**, the information within the viewing area **15** is not affected. When the operator ceases moving the browsing tool **10** and the browsing tool **10** remains stationary for a predetermined amount of time, the information within the viewing area **15** is enhanced depending upon which mode the browsing tool **10** is in. . .The browsing tool **10** can be used to browse through computer database information using three different modes: a 'magnification' mode, a hierarchical browsing mode, and a data filtering mode. When in the magnification mode, the browsing tool **10** enhances the information within the magnifying reticle **13** such that the information is presented in greater detail. When browsing tool **10** is in the hierarchical browsing mode, the browsing tool **10** reveals the next lower hierarchical level of information within the viewing area **15**. When in the data filtering mode the browsing tool **10** illustrates the information within the viewing area **15** as interpreted by a preset data filtering rule. Each browsing mode will be explained in detail. . .Magnification Mode...The magnification mode of the browsing tool **10** is used to provide a more detailed view of the information displayed graphically on the display screen. When the browsing tool **10** is in the magnification mode, the browsing tool **10** enhances the information located within the magnifying reticle **13** such that the information fills the viewing area **15** of the browsing tool **10**. The enhanced information is not simply enlarged, more detailed information not previously displayed becomes visible...Referring to FIG. 2a, the browsing tool **10** is illustrated with a magnification adjustment slider **17** and a toggle switch **19**. The magnification

> adjustment slider **17** is set by an operator using the cursor **21** on the display. The magnification adjustment slider **17** is adjusted to set the scale of the magnification. When the magnification adjustment slider **17** is adjusted by an operator, the magnifying reticle **13** continuously changes in size to reflect the area which will be enhanced. The smaller the magnifying reticle **13**, the greater the enhancement will be. In some applications the database information can only be presented on the screen in a finite number of discrete 'resolutions'. In such applications the magnifying reticle **13** correspondingly changes size in discrete steps." (Col. 4, line 19 to col. 5, line 21.)

Also, please consider the following additional selection from Mullet (underlining added by the Applicant):

> "Data Filtering Mode...Computer databases often contain such a large amount of information that the amount of information can overwhelm an operator. For example, if a city street map, a city sewer line map, and a map of all the public transportation routes available in the city are displayed simultaneously on a screen display, the display will appear cluttered and difficult to read...To simplify a database with a large amount of information, the information can be divided into several 'layers'. In the example of the previous paragraph, the information could be divided into a city street data layer, a city sewer line data layer, and a public transportation route data layer. When displaying such data on a screen display, only one data layer should be displayed at a time so the screen does not become cluttered...In such 'layered' databases the browsing tool of the present invention can be used to combine the data layers without cluttering the screen. For example the browsing tool of the present invention can be used as a 'filter' which only allows certain data through or allows different information through. An example of this technique is presented in FIG. 7...Referring to FIG. 7, a street map of San Francisco's Fisherman's Wharf district is displayed on a graphics screen display. An operator viewing the street map can pick a destination. After the operator has chosen a destination, the operator positions the viewing lens **15** of the browsing tool **10** onto the destination to reveal the public transportation routes which service the chosen destination. FIG. 7 illustrates a browsing tool **10** with the viewing lens **15** placed on and Francisco streets. The browsing tool **10** displays the 32 bus, 15 bus

> and 42 bus routes within the viewing lens **15**. **In the data filter mode, the magnifying reticle 13 is not used**...FIGS. 8a and 8b illustrate a second example of the browsing tool used as a database filter. FIG. 8a illustrates backbone of a telephone network system. The telephone network system backbone of FIG. 8a is comprised of central switching offices **71** and trunk lines **75**. The browsing tool **10** can be set to use filtering rule which requests all smaller lines and switching stations to be illustrated. When an operator positions the browsing tool **10** over the telephone network system as illustrated in FIG. 8b, the smaller switching substations **79** and connection lines **77** are revealed in the viewing area **15**. **Note that the central switching offices 71 and trunk lines 75 are not enlarged, since the browsing tool is being used to filter through additional information and not to enhance the information.**" (Col. 7, line 44 to col. 8, line 25.)

For reference, paragraphs 0027 and 0110 of Higgins, cited by the Examiner above, recite the following (the Abstract, paragraphs 0109 and 0111-0115 added for context and underlining added by the Applicant):

> "**Abstract**...An originally non-georeferenced raster map, which may have resulted from scanning and storing a non-georeferenced paper map, is georeferenced with reference to a georeferenced map, such as a vector map. Points denoting common features, such as road intersections, on each map are captured as point-pairs. When two point-pairs have been captured, a computer system calculates two functions, one converting the x,y coordinates of the raster map to the lat,lon coordinates of the vector map, the other converting lat,lon to x,y. Thereafter, the maps may be viewed simultaneously - top-and-bottom, side-by-side - or quasi-simultaneously, for example, toggling rapidly back and forth. The georeferencing functions are used by the system to effect manipulation of one map as the other map is manipulated. Thus, any manipulation of the vector map -scrolling, zooming, etc, - by a user is mimicked by the raster map."

> "**[0027]** After georeferencing the raster map, the maps are simultaneously displayed -side-by-side, top-to-bottom, superimposed. Any point of either map can be cross-referenced to the other map by the use of the appropriate georeferencing function. Accordingly, the maps can

be manipulated, edited, annotated, panned, rotated and otherwise affected in a synchronized manner by defining the manipulations in terms of the geographic coordinate system and using the georeferencing functions to translate their manipulations to each map's coordinate system."

"**[0109]** The preferred embodiment may be applied to any system which simultaneously displays multiple map images, but is particularly valuable for systems displaying a raster map image and a vector map image."

"**[0110]** Map image synchronization is a method whereby two map images can be made to show the same geographic region at all times, maintaining this synchronization even after one of the images is panned, zoomed, scrolled, or otherwise caused to display a different region. Whenever such a change occurs on one map, the system causes the same change to occur on the other map as well. In this way, the two images continue to display the same region, without the need of manually adjusting both maps. In addition the synchronization system allows annotations to be placed on either map at specified geographic locations, and causes a matching annotation to appear on the other map in the corresponding location."

"**[0111]** The two maps in question may be any combination of digital raster and vector maps, as long as georeferencing information is available for both maps. According to the preferred embodiment, one map is a digital raster map, and the other map is a vector map, both maps covering the same geographic area. Multiple configurations of the map display are possible. These include:

[0112] 1. Both maps are displayed side by side, or one above the other on the computer display.

[0113] 2. One map is superimposed directly on top of the other.

[0114] a. The background of the top map is transparent, so that the user can see features of both the top map and the bottom map, or

> **[0115]** b. Both maps are opaque, but a user may toggle back and forth rapidly between the two images"

First, consider the Examiner's following statement: "Mullet discloses information within the viewing area **15** is enhanced depending upon which mode the browsing tool **10** is in (column 4, lines 46-50), which reads on the claimed distorting a portion of a first layer of said original image to produce a distorted image for said region." Mullet does not teach this. Rather, it teaches the opposite. In Mullet's "Data Filtering Mode" which pertains to layered information, the browsing tool **10** does not perform any magnification (or distortion). See the underlined portions of col. 7, line 44 to col. 8, line 25 of Mullet quoted above. As such, Mullet teaches away from the subject matter of amended Claim 1. And as such, Mullet does not teach or suggest that element of amended Claim 1 that recites: "distorting a portion of a first layer of said original image to produce a distorted image for said region".

Second, consider the Examiner's following statement: "Mullet discloses the viewing lens **15** being overlaid on the original image **10** (Figures 2A-2D), which reads on the claimed overlaying said distorted image on a second layer of said original image to produce an overlaid image and displaying said overlaid image on said display screen to replace display of said original image." Again, Mullet does not teach this. Rather, it teaches the opposite. In Mullet's "Data Filtering Mode" which pertains to layered information, the browsing tool **10** does not perform any magnification (or distortion). See the underlined portions of col. 7, line 44 to col. 8, line 25 of Mullet quoted above. In particular, the viewing lens 15 does not contain a magnified image when in the Data Filtering Mode and hence it cannot be considered a "distorted image". As such, Mullet teaches away from the subject matter of amended Claim 1. And as such, Mullet does not teach or suggest that element of amended Claim 1 that recites: "overlaying said distorted image on said region in a second undistorted layer of said original image to produce an overlaid image and displaying said overlaid image on said display screen to replace display of said original image, said distorted image at least partially surrounded by non-overlaid portions of said second undistorted layer in said overlaid image".

Third, Higgins does not pertain to image distortion. As such, Higgins is non-analogous art. A search for the word "distort" within the text of the on-line version of Higgins found no hits. That is, Higgins does not even mention the word "distort" (or distorting, etc.). What Higgins pertains to is synchronizing map images. As such, and noting that the "overlaid image" includes a "distorted image", Higgins does not teach or suggest that element of amended Claim 1 that recites: "upon completion of editing of said overlaid image, selectively propagating edits made to said first layer through to said second undistorted layer of said original image".

Fourth, given the second and third comments above, the Examiner has not provided an adequate reason for combining Mullet and Higgins.

Claims 7-10

For reference, currently amended Claims 7-10 recite the following:

> 7. (Currently Amended) The method of claim 1 and further comprising receiving a signal for selecting a folded distorted image in which said magnified region is repositioned.
>
> 8. (Currently Amended) The method of claim 7 wherein said folded distorted image further includes a second magnified region for said region in said second layer.
>
> 9. (Currently Amended) The method of claim 8 wherein said magnified region in said folded distorted region is repositioned by folding away from an original position relative to said compressed region to accommodate said second magnified region.
>
> 10. (Currently Amended) The method of claim 9 wherein said second magnified region is located at said original position and wherein said second magnified region has said magnification.

On page 8 of the Office Action the Examiner cites Mullet and Carpendale against previous Claims 7-10 stating (underlining added by the Applicant):

> "Regarding dependent claims 7-9, Mullet did not expressly disclose receiving a signal for selecting a folded distorted image and the folded distorted image includes a second magnified region for displaying said region in said second layer and the magnified region is folded away from an original position relative to said compressed region. Carpendale disclose a step pyramid lens that has multiple magnified regions and is folded away from an original position relative to a compressed region and is located at the original position (pages 145-149 and Figure 5.37). It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Mullet's system by applying a stepwise lens for magnification. One would be motivated to do so because this allow users to see multiple magnifications of the desired areas to efficiently examine the desired areas...Regarding dependent claim 10, Mullet discloses the magnified area is centered relative to the viewing region (Figures 2a-2d), which reads on the claims second magnified region is located at said original position."

First, Figure 5.37 on page 145 of Carpendale shows a step pyramid distortion function that is not folded. This is apparent from the left panel of Figure 5.37 in which no portion of the grid overlaps any other portion of the grid. In contrast, FIG. 11 of the Applicant's drawings shows a folded distorted image **1180** having a first magnified region **1120** that is repositioned by folding away from its original position (as shown in FIG. 7). In FIG. 11, the folding is to such an extent that the first magnified region **1120** overlaps the second layer **670**.

As such, Mullet and Carpendale do not teach or suggest that element of amended Claim 7 that recites: "a folded distorted image in which said magnified region is repositioned".

Second, Figure 5.37 on page 145 of Carpendale shows only one focal region. It's the central circular region in the left panel of Figure 5.37. The surrounding circular regions represent the shoulder region of the distortion function. In contrast, FIG. 11 of the Applicant's drawings shows two focal regions, namely, a first magnified region **1120** that is folded away from its original position and a second magnified region **620** that is displayed at the original position of the first magnified region **1120**.

As such, Mullet and Carpendale do not teach or suggest that element of amended Claim 8 that recites: "wherein said folded distorted image further includes a second magnified region for said region in said second layer". In addition, Mullet and Carpendale do not teach or suggest that element of amended Claim 9 that recites: "wherein said magnified region in said folded distorted region is repositioned by folding away from an original position relative to said compressed region to accommodate said second magnified region". Furthermore, Mullet and Carpendale do not teach or suggest that element of amended Claim 10 that recites: "wherein said second magnified region is located at said original position and wherein said second magnified region has said magnification".

Claims 11-12

For reference, currently amended Claims 11-12 recite the following:

> 11. (Currently Amended) The method of claim 1 and further comprising receiving a signal for selecting a window for display within said magnified region.
>
> 12. (Currently Amended) The method of claim 11 wherein said window displays a portion of said second layer at said magnification.

On pages 6-7 of the Office Action the Examiner cites Mullet and Dursteler against previous Claims 11-12 stating (underlining added by the Applicant):

> "Regarding dependent claims 11 and 12, Mullet did not expressly disclose receiving a signal for selecting a window for display in said magnified region and the window displays a portion of said second layer. Dursteler discloses the resizing of the focal region in the base region (pg 2, see Figure towards top) and the focal region is the magnification region (pg 2, see Figure towards top). It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Mullet's system by having a window that adjusts the magnified region. One would be motivated to do so because to allow user to efficiently view

> a magnified region of the desired area and to see enough of the magnified desired area all at once."

First, neither Dursteler nor Mullet teach or suggest a window within a magnified region. The Examiner has not pointed out where in Dursteler, for example, that such a window is taught. The graphical user interface ("GUI") shown in Dursteler is for adjusting the parameters of the lens or distortion function that is applied to an original image. This GUI is not a window. FIG. 12 of the Applicant's drawings shows the window **1202** within the magnified region **620** that is recited in amended Claim 11. In addition, as discussed above, Mullet's browsing tool **10** does not apply distortion or magnification when multiple layers are viewed and hence does not teach a magnified region in that context. As such, Dursteler and Mullet do not teach or suggest that element of amended Claim 11 that recites: "receiving a signal for selecting a window for display within said magnified region".

Second, neither Durstelter nor Mullet teach or suggest a window within a magnified region for a first layer that is used to view a magnified portion of a second layer. As discussed above, Dursteler does not teach or suggest such a window and Mullet does not teach a magnified region. As such, Dursteler and Mullet do not teach or suggest that element of amended Claim 12 that recites: "wherein said window displays a portion of said second layer at said magnification".

Summary

In summary, for the reasons given above, the Applicant believes that amended Claim 1 is patentable over Mullet, Higgins, Dursteler, and Baar as these references do not teach or suggest the subject matter of this claim. In addition, the Applicant believes that Claims 2-19, being dependent on amended Claim 1, and adding patentable features thereto, are also patentable.

For the reasons given above with respect to amended Claim 1, the Applicant believes that amended Claim 20 is patentable. In addition, the Applicant believes that Claims 21-35, being dependent on amended Claim 20, and adding patentable features thereto, are also patentable.

No new subject matter has been introduced by the above amendments.

The Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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